TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN/TS 16700

August 2014

ICS 87.040

English Version

Paints and varnishes - Coating materials and coating systems for exterior wood - Assessment of resistance to impact of a coating on a wooden substrate

Peintures et vernis - Produits de peinture et systèmes de revêtements pour le bois en extérieur - Evaluation de la résistance au choc d'un revêtement sur un subjectile en bois

Beschichtungsstoffe - Beschichtungsstoffe und Beschichtungssysteme für Holz im Außenbereich - Beurteilung der Schlagfestigkeit einer Beschichtung auf Holzusubstrat

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Foreword

This document (CEN/TS 16700:2014) has been prepared by Technical Committee CEN/TC 139 “Paints and Varnishes”, the secretariat of which is held by DIN.

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Introduction

During the use coated wood surfaces are exposed to various impacts. A suitable resistance of a coating on wood to impact is of importance to keep the substrate further protected with intact coating without cracks or flakes. The simple method described in this document provides quick information if a coating on wood is capable to withstand impacts without cracks or not. A similar method exists in ISO 4211-4 for furniture surfaces in interior use but in the present document the procedure is adopted and description of a carefully selected substrate is added to enable testing of coating materials and coating systems for exterior wood. The method should preferably be used on coatings that have not been exposed to weathering but it may also be applied after ageing of the coating or under different climatic conditions to gain additional experience.

1 Scope

This Technical Specification specifies a test method for assessing the resistance of a coating to impact on a defined and carefully selected wooden substrate for coatings on wood components in exterior use.

The method is preferably used on coatings that have not been exposed to weathering. The method is suitable for use either as a means of comparing different coating systems or as a quality control test to ensure that a specified performance level is being achieved or maintained.

The nature of the substrate will have a major effect on the results obtained in the test. Therefore use of any other substrate than the one specified should be clearly stated in the test report.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 3131, *Wood — Determination of density for physical and mechanical tests*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
coating
layer formed from a single or multiple application of a coating material to a substrate

[SOURCE: FprEN ISO 4618:2014, 2.50.1]

3.2
impact resistance
ability of a coating to resist deformation from a sudden blow without damage

3.3
cracking
rupturing of a dry film or coat

[SOURCE: FprEN ISO 4618:2014, 2.65, modified — Notes have been left out]

3.4
flaking
detachment of small parts of a coating due to a loss of adhesion

[SOURCE: FprEN ISO 4618:2014, 2.114]